

Appendix C

SOIL PROFILE DESCRIPTIONS BY JOHN STITELER

Client: Hunter Research, Inc.

Unit: BHT1

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 5/18/2006

Horizon	Depth (ft)	Morphology
A1	0-.55'	Dark grayish brown (10YR4/2) silt loam; weak granular structure; very friable; few pieces round gravel at E end, increasing to much gravel at W end; few fine faint redoximorphic mottles; clear smooth boundary.
A2/AC	.55- 1.3'	Brown (10YR4/3) silt loam; weak medium subangular blocky, some parting to platy structure; no stone except for one gravel lens; very friable; few fine faint redoximorphic mottles; clear smooth boundary.
Apb	1.3- 2.15'	Dark brown (10YR3/3) silt loam; weak to moderate coarse subangular blocky structure; friable; common fine faint redoximorphic mottles; abrupt smooth boundary at E end, some AB underlying at W end.
Bwb1	2.15- 3.45'	Yellowish brown (10YR5/6-5/8) silt loam; moderate medium subangular blocky structure; friable; a few pieces fine round gravel; common medium distinct redoximorphic mottles; clear smooth boundary.
Bwb2	3.45- 4.2'	Dark yellowish brown to yellowish brown (10YR4/6-5/6) sandy loam to loam; moderate coarse subangular blocky structure; 5-8% round gravel and small cobbles; friable; many coarse prominent redoximorphic mottles; clear smooth boundary.
C	4.2- 4.9' (BOE)	Brown (7.5YR4/4) sandy loam to loamy sand; massive structure; many coarse prominent redoximorphic mottles; friable; 50-60% round gravel and cobbles.

Notes: medium boulder and some cobbles in W end Bwb1, which is within flood chute at floodplain-terrace scarp junction.

Client: Hunter Research, Inc.

Unit: BHT2

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 5/18/2006

Horizon	Depth (ft)	Morphology
A	0-.5'	Dark grayish brown (10YR4/2) fine sandy loam; weak granular structure; very friable; few pieces round gravel; few fine faint redoximorphic mottles; clear wavy boundary.
AC	.5-1.2'	Dark yellowish brown (10YR3/4) sandy loam; massive structure; 10-15% round gravel; very friable; few fine faint redoximorphic mottles; abrupt wavy boundary.
C	1.2- 1.45'	Strong brown (7.5YR5/8) sand; single grained; abrupt wavy boundary.
Apb	1.45 - 2.95'	Dark grayish brown (10YR4/2) very fine sandy loam, fining to silt loam at base; moderate coarse subangular blocky structure; little or no gravel; friable; common medium faint redoximorphic mottles; abrupt smooth boundary.
Bwb1	2.95- 4.35'	Yellowish brown (10YR5/6-5/8) silt loam to loam; moderate coarse subangular blocky structure; friable; little or no gravel; common medium distinct redoximorphic mottles, some Fe-Mn concretions, matrix generally reduced; clear smooth boundary.
Bwb2	4.35- 4.95'	Yellowish brown (10YR5/8) fine sandy loam; weak coarse subangular blocky structure; 10-15% round gravel and small cobbles; friable; many medium distinct and prominent redoximorphic mottles; clear smooth boundary.
C	4.95- 5.5' (BOE)	Yellowish brown (10YR5/6-5/8) sandy loam coarsening to loamy sand w/ depth; massive structure; many coarse prominent redoximorphic mottles; friable; 5-8% round gravel and cobbles at surface increasing in size and number w/ depth.

Notes: large boulder at Apb/Bwb1 boundary.

Client: Hunter Research, Inc.

Unit: BHT3

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 5/18/2006

Horizon	Depth (ft)	Morphology
A	0-.4'	Brown (10YR4/3) silt loam to very fine sandy loam; moderate granular structure, some parting to platy; very friable; <5% round gravel; few fine faint redoximorphic mottles; clear wavy boundary.
AC1	.4-1.15'	Brown (10YR4/3) sandy loam; very weak coarse subangular blocky parting to weak coarse platy structure, plate faces reduced; 5-8% round gravel; very friable; few fine faint redoximorphic mottles; abrupt wavy boundary.
C1	1.15 - 1.8'	Strong brown (7.5YR5/6-5/8) loamy sand; single-grained; much very fine round gravel; abrupt wavy boundary.
AC2	1.8-2.25'	Dark yellowish brown (10YR4/4) sandy loam; weak coarse subangular blocky structure; 3-5% fine and very fine round gravel; common fine faint redoximorphic mottles; clear smooth boundary.
C2	2.25-2.35'	Strong brown (7.5YR5/6-5/8) sand; single-grained; abrupt wavy boundary.
Apb	2.35-3.2'	Dark brown (10YR3/3) fine sandy loam; weak coarse prismatic parting to weak coarse platy structure; little or no gravel; friable; common medium distinct redoximorphic mottles; abrupt wavy boundary.
Bwb1	3.2-4.4'	Brown (7.5YR4/3) loam paling at base in some areas to 10YR4/6; moderate very coarse parting to coarse prismatic structure; friable; no gravel; common medium distinct redoximorphic mottles; clear smooth boundary.
Bwb2	4.4-5.3'	Yellowish brown (10YR5/6) very fine sandy loam to loam; weak to moderate coarse subangular blocky structure; no gravel; friable; many medium and coarse prominent redoximorphic mottles, many Fe-Mn concretions; clear smooth boundary.
BC	5.3-6.3	Dark yellowish to yellowish brown (10YR4/6-5/8) sandy loam to loamy sand; weak coarse prismatic structure; <3% gravel; very friable; gradual smooth boundary.
C	6.3-7' (BOE)	Brown – strong brown (7.5YR4/4-4/6) loamy sand w/ much mica; massive structure; very friable; 15-20% round gravel and cobbles at surface increasing in size and number w/ depth.

Client: Hunter Research, Inc.

Unit: BHT4

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 5/18/2006

Horizon	Depth (ft)	Morphology
A	0-0.4'	Brown (10YR4/3) fine sandy loam; weak granular structure; very friable; <5% round gravel; few fine faint redoximorphic mottles; clear wavy boundary.
Fill	0.4-1.4'	Strong brown (7.5YR5/6) and gray (10YR6/1) loamy coarse sand; very weak coarse subangular blocky parting to weak coarse platy structure, plate faces reduced; 5-8% round gravel; very friable; few fine faint redoximorphic mottles; abrupt wavy boundary.
Apb1	1.4-2.2'	Brown (10YR4/3) sandy loam; weak coarse subangular blocky structure; little or no gravel; friable; few fine distinct redoximorphic mottles; abrupt wavy boundary.
Apb2	2.2-3.0'	Very dark gray (10YR3/1) fine sandy loam, much fine oxidized organic matter; weak medium subangular blocky structure; little or no gravel; friable; common fine distinct redoximorphic mottles; clear smooth boundary.
Bwg	3.0-3.2'	Very dark grayish brown (2.5Y3/2) silt loam; weak medium subangular blocky structure; friable; no gravel; common fine faint redoximorphic mottles; gradual wavy boundary.
Bwb	3.2-4.9'	Yellowish brown (10YR5/6) very fine sandy loam to loam; moderate coarse prismatic structure; no gravel; friable; common medium and distinct redoximorphic mottles; clear smooth boundary.
BC	4.9-5.8'	Brown (7.5YR4/4) loamy coarse sand; massive structure; very friable; <5 round gravel; very weak coarse subangular blocky to massive structure; common medium distinct redoximorphic mottles .
C	5.8-6.2 (BOE)	Round gravel and cobbles in strong brown (7.5YR5/6) loamy coarse sand.

Client: Hunter Research, Inc.

Unit: BHT5

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 5/18/2006

Horizon	Depth (ft)	Morphology
A	0-0.8'	Brown (10YR4/3) silt loam to very fine sandy loam; weak granular structure; very friable; no gravel; common fine faint redoximorphic mottles; clear wavy boundary.
Apb	0.8- 1.9'	Dark brown (10YR3/3) silt loam; weak coarse subangular blocky parting to weak coarse granular structure; no gravel; very friable; common fine and medium distinct redoximorphic mottles; abrupt smooth boundary.
Bwb	1.9- 2.65'	Strong brown (7.5YR4/6-5/6) silt loam; moderate medium subangular blocky, some parting to platy structure; somewhat firm; 3-5% round gravel; common medium distinct redoximorphic mottles; clear smooth boundary.
BC	5.3- 6.3 (BOE)	Strong brown (7.5YR4/6) loamy sand; weak coarse prismatic structure; 15% round gravel at surface, increasing w/ depth; friable; many coarse prominent redoximorphic mottles and Fe-mn concretions.

Notes: Water entering base of trench.

Client: Hunter Research, Inc.

Unit: BHT6

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 5/18/2006

Horizon	Depth (ft)	Morphology
A	0-1.2'	Very dark grayish brown (10YR3/2) silt loam; weak medium subangular blocky parting to weak granular structure; very friable; 1 or 2 pebbles; few fine faint redoximorphic mottles; abrupt wavy boundary.
C	1.2- 1.3'	Dark yellowish brown (10YR4/4) sand; single-grained; no gravel; thickness and depth bs undulates; abrupt smooth boundary.
Apb	1.3- 2.55'	Dark brown to dark yellowish brown (10YR3/3-3/4) silt loam; weak medium subangular blocky parting to weak granular structure, most faces reduced; common fine faint redoximorphic mottles; little or no gravel; very friable; clear smooth boundary.
Bwb1	2.55- 4.15'	Yellowish brown (10YR5/6) very fine sandy clay loam to loam; moderate coarse prismatic structure; somewhat firm; no gravel; common coarse prominent redoximorphic mottles; gradual smooth boundary.
Bwb2	4.15- 4.9'	Yellowish brown (10YR5/6) loam; moderate coarse prismatic structure; somewhat firm; no gravel; common coarse prominent redoximorphic mottles; gradual smooth boundary.
BC	4.9- 5.3'	Yellowish brown (10YR5/6-5/8) sandy clay loam; very weak coarse subangular blocky structure; 10% round gravel; friable; largely gleyed.
C	5.3- 5.5' (BOE)	Yellowish brown (10YR5/6-5/8) sandy clay loam; massive structure; 50-60% round gravel; friable; largely gleyed.

Notes: Water entering base of trench; surface of C horizon undulates, reflecting gravel bars.

Client: Hunter Research, Inc.

Unit: BHT7

Location: Left bank high floodplain
Red Clay Creek
Glennville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 5/18/2006

Horizon	Depth (ft)	Morphology
A1	0- 1.25'	Dark brown (10YR3/3) silt loam; very weak medium subangular blocky parting to weak granular structure; very friable; no gravel; few fine faint redoximorphic mottles; abrupt wavy boundary.
C	1.25- 1.3'	Dark yellowish brown (10YR4/4) sand; single-grained; no gravel; thickness and depth bs undulates; abrupt smooth boundary.
A2	1.3- 1.6'	Dark yellowish brown (10YR3/4) silt loam; very weak medium subangular blocky parting to weak coarse granular structure; few fine faint redoximorphic mottles; little or no gravel; very friable; clear smooth boundary.
AB	1.6- 1.9'	Dark yellowish brown (10YR3/4-4/4) silt loam; moderate coarse subangular blocky structure; few medium distinct redoximorphic mottles; little or no gravel; very friable; clear smooth boundary.
Bwb1	1.9- 3.5'	Yellowish brown (10YR5/6) very fine sandy clay loam to loam; moderate coarse prismatic parting to moderate medium subangular blocky structure; friable; no gravel; common coarse prominent redoximorphic mottles; abrupt to clear smooth boundary.
BCb	3.5- 4.4'	Yellowish brown (10YR5/8) sandy loam, much mica; weak coarse subangular blocky structure; no gravel; friable; many medium prominent redoximorphic mottles; clear smooth boundary.
C	4.4-5' (BOE)	Strong brown (7.5YR4/6) loamy coarse sand; massive structure; 50-60% round gravel and cobbles; very friable; largely gleyed.

Notes: Water entering base of trench; appears that Ap was scalped and replaced by historic to recent deposition.

Client: Hunter Research, Inc.

Unit: BHT8

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 5/18/2006

Horizon	Depth (ft)	Morphology
A	0-.45'	Very dark grayish brown (10YR3/2) fine sandy loam; weak granular structure; very friable; no gravel; few fine faint redoximorphic mottles; clear smooth boundary.
Apb	.45-1.5'	Dark brown (10YR3/3) silt loam; weak medium subangular blocky parting to weak medium granular structure; few fine faint redoximorphic mottles; little or no gravel; very friable; abrupt smooth boundary.
Bwb1	1.5-3.3'	Dark yellowish brown (10YR4/4-4/6) silt loam; moderate coarse prismatic parting to weak-moderate medium subangular blocky structure; friable; no gravel; common medium distinct redoximorphic mottles; clear smooth boundary.
Bwb2	3.3-4.6'	Dark yellowish brown (10YR4/4-4/6) fine sandy loam; weak coarse prismatic parting to weak-moderate coarse subangular blocky structure; friable; no gravel; many medium distinct redoximorphic mottles; clear smooth boundary.
BC	4.6-5.3'	Dark yellowish brown (10YR4/4-4/6) sandy loam; very weak coarse subangular blocky structure; friable; 5-8% round gravel; many medium prominent redoximorphic mottles; clear smooth boundary.
C	5.3-5.9' (BOE)	Dark yellowish brown (10YR4/6) sandy loam to loamy coarse sand; massive structure; 15-25% round gravel and cobbles; very friable; largely gleyed.

Client: Hunter Research, Inc.

Unit: BHT9

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 5/19/2006

Horizon	Depth (ft)	Morphology
A	0-.35'	Dark grayish brown (10YR4/2) silt loam; moderate medium granular structure; very friable; no gravel; common fine distinct redoximorphic mottles; clear wavy boundary.
AC	.35- 1.2'	Dark brown (10YR3/3) silt loam; weak medium granular structure; common fine faint redoximorphic mottles; no gravel; very friable; abrupt wavy boundary.
Cg	1.2 - 1.35'	(Discontinuous) Dark gray (10YR4/1) silty clay loam; massive structure; friable; no gravel; common fine faint redoximorphic mottles, matrix heavily reduced; abrupt wavy boundary.
Fill	1.35- 3.25'	Dark brown (7.5YR3/4) loamy coarse sand; 50% rounded gravel and cobbles; massive structure; very friable; abrupt wavy boundary.
Bwb	3.25- 3.4'	Yellowish brown (10YR5/6) sandy loam to loam; weak medium subangular blocky structure; friable; no gravel; many medium distinct and prominent redoximorphic mottles; clear smooth boundary.
BC	3.4- 4.4	Dark yellowish brown (10YR4/4) loamy coarse sand; very weak coarse subangular blocky structure; many medium and coarse prominent redoximorphic mottles; little or no gravel; very friable; clear smooth boundary.
CI	4.4- 6.2' (BOE)	Dark brown (7.5YR3/4) coarse sand; 50% rounded gravel and cobbles at base; single-grained structure; very friable.

Notes: Water rising rapidly in base of trench.

Client: Hunter Research, Inc.

Unit: BHT10

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 5/19/2006

Horizon	Depth (ft)	Morphology
A	0-.3'	Dark grayish brown (10YR4/2) silt loam; weak medium granular structure; very friable; no gravel; common fine faint redoximorphic mottles; gradual smooth boundary.
AC	.3-1.1'	Dark brown (10YR3/3) silt loam; very weak medium granular structure; common fine distinct redoximorphic mottles; no gravel; very friable; clear wavy boundary.
Fill	1.1- 1.8'	Dark brown (10YR3/3) silt loam; 20% rounded gravel and cobble, inclusions of clay, some plastic; massive structure; very friable; abrupt broken boundary.
Bwb	1.8- 3.0'	Dark yellowish brown (10YR4/6) silt loam; weak coarse prismatic structure, some parting to coarse platy; friable; little or no gravel; common medium prominent redoximorphic mottles; clear smooth boundary.
BC	3.0- 4.4	Strong brown (7.5YR4/6) sandy loam to loam; weak coarse prismatic structure; many medium prominent redoximorphic mottles; little or no gravel; somewhat firm; gradual smooth boundary.
C1	4.4- 4.4- 5.1'	Dark brown (7.5YR3/4) loamy coarse sand; very weak coarse prismatic structure; single-grained structure; many medium prominent redoximorphic mottles; very friable.
C2	5.1- 5.9' (BOE)	Dark brown (7.5YR3/4) coarse sand; very weak coarse prismatic structure; single-grained structure; many medium prominent redoximorphic mottles; very friable; rounded gravel at base.

Notes: Water rising rapidly in base of trench.

Client: Hunter Research, Inc.

Unit: BHT11

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 5/19/2006

Horizon	Depth (ft)	Morphology
A	0-.3'	Dark grayish brown (10YR4/2) silt loam; weak medium granular structure; very friable; no gravel; common fine faint redoximorphic mottles; gradual smooth boundary.
AC	.3-1.2'	Dark brown (10YR3/3) silt loam; weak medium granular structure; few fine faint redoximorphic mottles; no gravel; very friable; clear wavy boundary.
Fill	1.2 - 1.8'	Mixed red clay. White kaolinitic clay, sandy clay, rounded gravel; massive structure; very friable; abrupt broken boundary.
Bwg	1.8- 2.5'	Olive brown (2.5Y4/3) sandy loam; weak very coarse prismatic structure, some parting to weak coarse platy; friable; little or no gravel; common medium prominent redoximorphic mottles; clear smooth boundary.
Cg	2.5- 4.5	Dark grayish brown (2.5Y4/2) loamy sand; massive structure; common coarse prominent redoximorphic mottles; little or no gravel.

Notes: Water rising rapidly in base of trench. Went deeper with backhoe after description – revealed gleyed silty clay 5.3-6.3', over cobbles. Wood retrieved at 5.4-5.8'bs, retained for dating.

Client: Hunter Research, Inc.

Unit: BHT13

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 5/18/2006

Horizon	Depth (ft)	Morphology
A	0-.45'	Dark yellowish brown (10YR4/4) fine sandy loam; weak granular structure; very friable; no gravel; few fine faint redoximorphic mottles; clear wavy boundary.
Fill	.45- 2.6'	Cobbles, gravel, clay inclusions in 7.5YR sandy loam and loamy sand – backdirt from sewer trench
Apb	2.6- 3.3'	Dark brown (7.5YR3/2) sandy loam; weak medium subangular blocky structure; common fine distinct redoximorphic mottles; little or no gravel; very friable; abrupt smooth boundary.
Bwb1	3.3- 4.6'	Dark yellowish brown (10YR4/4-4/6) silt loam to very fine sandy loam; moderate coarse prismatic structure; friable; <1% gravel; common medium distinct redoximorphic mottles; gradual smooth boundary.
Bwb2	4.6- 5.6'	Dark yellowish brown (10YR4/4-4/6) very fine sandy loam; moderate coarse prismatic structure; somewhat firm; <1% gravel; common medium distinct redoximorphic mottles; clear smooth boundary.
C	5.6- 5.9' (BOE)	Brown (7.5YR4/4) loamy sand; massive structure; 15-25% round gravel and cobbles; very friable.

Client: Hunter Research, Inc.

Unit: BHT14

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 5/18/2006

Horizon	Depth (ft)	Morphology
A	0- 0.45'	Brown (10YR4/3) fine sandy loam; weak granular structure; very friable; no gravel; few fine faint redoximorphic mottles; clear smooth boundary.
AC	0.45- 1.3'	Dark brown (7.5YR3/4) sandy loam; very weak coarse subangular blocky structure; abrupt smooth boundary.
Apb	1.2- 2.0'	Dark brown (10YR3/3) silt loam; weak medium subangular blocky structure; few fine faint redoximorphic mottles; little or no gravel; very friable; abrupt to clear smooth boundary.
Bwb1	1.5- 3.3'	Dark yellowish brown (10YR4/4-4/6) silt loam; moderate coarse prismatic parting to weak-moderate medium subangular blocky structure; friable; a few matrix-supported cobbles; common fine faint redoximorphic mottles; clear smooth boundary.
Bwb2	3.3- 4.6'	Yellowish brown (10YR5/6) sandy loam; weak coarse prismatic parting to weak-moderate coarse subangular blocky structure; friable; no gravel; many medium distinct redoximorphic mottles; clear smooth boundary.
BC	4.6- 5.3'	Dark yellowish brown (10YR4/4-4/6) sandy loam; weak coarse subangular blocky structure; friable; 5-8% round gravel; common medium distinct redoximorphic mottles; clear smooth boundary.
C	5.3- 5.9' (BOE)	Dark yellowish brown (10YR4/6) sandy loam to loamy coarse sand; massive structure; 20-30% round gravel and cobbles; very friable.

Client: Hunter Research, Inc.

Unit: EU1

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 9/22/2006

Figure: 4

Horizon	Depth (cm)	Morphology
Fill	0-16	Dark brown (10YR3/3) fine sandy loam w/ inclusions of Bw material and gravel.
Apb1	16-32	Dark yellowish brown (10YR3/4) very fine sandy loam; weak medium subangular blocky parting to weak medium granular structure; common fine faint redoximorphic mottles; little or no gravel, some plastic fragments; somewhat firm; abrupt smooth boundary.
Apb2	32-44	Dark yellowish brown (10YR3/4) fine sandy loam; moderate medium prismatic parting to weak medium subangular blocky structure; compacted; common medium distinct redoximorphic mottles; little or no gravel; somewhat firm; lower boundary bioturbated, clear broken.
Bwb1	44-70	Dark yellowish brown to yellowish brown (10YR4/6-5/6) fine sandy loam; moderate medium prismatic, some parting to weak to moderate medium subangular blocky structure; friable; no gravel; few medium distinct redoximorphic mottles in upper 1/2, common medium distinct redoximorphic mottles in lower 1/2; abrupt smooth boundary.
Bwb2	70-108	Brown to strong brown (7.5YR4/4-4/6) sandy loam to loamy sand; moderate coarse prismatic, some parting to weak coarse platy structure; friable; no gravel; many medium and coarse prominent redoximorphic mottles; clear smooth boundary.
BC	108-128 (BOE)	Brown to strong brown (7.5YR4/4-4/6) loamy sand; weak coarse prismatic structure; friable; no gravel; many medium prominent redoximorphic mottles.

Notes: Bwb2 only present in N 2/3 of unit, S 1/3 is continuation of Bwb1 w/ much Fe-Mn staining. Abrupt boundary between Bwb1 and Bwb2 is scour surface, including scour channel in-filled by Bwb1 material in S 1/3.

Client: Hunter Research, Inc.

Unit: EU6

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 9/22/2006

Figure: 5

Horizon	Depth (cm)	Morphology
Apb1	0-15	Dark yellowish brown (10YR3/4-4/4) silt loam; weak medium subangular blocky parting to weak medium granular structure; common fine faint redoximorphic mottles; little or no gravel; friable; clear smooth boundary.
Apb2	15-33	Dark yellowish brown (10YR4/4) silt loam; moderate medium subangular blocky, some parting to weak medium granular structure; compacted; common fine distinct redoximorphic mottles; little or no gravel; somewhat firm; abrupt wavy boundary.
ABb	33-50	Bioturbated mix of Ap and Bw material; much Fe-Mn staining; common medium distinct redoximorphic mottles; discontinuous boundary.
Bwb1	50-75	Brown to strong brown (7.5YR4/4-4/6) silt loam; moderate coarse prismatic, some parting to weak coarse platy structure; friable; no gravel; many medium and coarse prominent redoximorphic mottles; clear smooth boundary.
Bwb2	75-92 (BOE)	Brown to strong brown (7.5YR4/4-4/6) sandy loam; moderate coarse prismatic structure; friable; no gravel; many medium and coarse prominent redoximorphic mottles; clear smooth boundary. Loamy sand BC horizon exposed in floor of unit

Notes: Several matrix-supported rounded cobbles in Bwb1.

Client: Hunter Research, Inc.

Unit: EU7

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 9/22/2006

Figure: 6

Horizon	Depth (cm)	Morphology
Apb1	0-30	Dark brown (10YR3/3) silt loam; weak medium subangular blocky parting to moderate coarse granular structure; common fine faint redoximorphic mottles; little or no gravel; friable; clear smooth boundary.
Apb2	30-60	Dark brown (10YR3/3) silt loam; weak medium prismatic parting to moderate coarse granular structure; common fine faint redoximorphic mottles; little or no gravel; somewhat firm; clear smooth boundary.
ABb	60-75	Bioturbated mix of Ap and Bw material; clear broken boundary.
Bwb1	75- 120	Dark yellowish brown (10YR4/4-4/6) silt loam; moderate medium prismatic structure; friable; <1% fine round gravel; many medium prominent redoximorphic mottles, some Fe-Mn staining; clear smooth boundary.
BC	120- 135 (BOE)	Strong brown (7.5YR4/6) loamy sand to loam; weak coarse prismatic structure; friable; 3-5% round gravel at base; many coarse prominent redoximorphic mottles.

Client: Hunter Research, Inc.

Unit: EU12

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 9/22/2006

Figure: 7

Horizon	Depth (cm)	Morphology
Apb	0-22	Dark brown (10YR3/3) silt loam; weak medium subangular blocky parting to moderate medium granular structure; few fine faint redoximorphic mottles; little or no gravel; friable; abrupt smooth boundary.
Bwb1	22-50	Dark yellowish brown (10YR4/6) to strong brown (7.5YR4/6) silt loam; moderate medium to coarse prismatic parting to moderate medium subangular blocky structure; common medium distinct redoximorphic mottles; little or no gravel; friable; clear smooth boundary.
Bwb2	50-70	Dark yellowish brown (10YR4/6) to strong brown (7.5YR4/6) silt loam, higher fine sand content than in Bwb1; moderate medium to coarse prismatic parting to moderate medium subangular blocky structure; common medium and coarse prominent redoximorphic mottles; 1% fine and medium round gravel; friable; clear smooth boundary.
Bwb3	70-95	Dark yellowish brown (10YR4/6) to strong brown (7.5YR4/6) fine sandy loam, much mica; moderate coarse prismatic parting to weak medium subangular blocky structure; friable; 1% fine and very fine round gravel; common medium and coarse prominent redoximorphic mottles; clear smooth boundary.
BC	95- 105 (BOE)	Dark yellowish brown (10YR4/4) loamy sand to sandy loam; weak coarse prismatic structure; friable; 5-8% medium and coarse round gravel, a few small cobbles; common coarse prominent redoximorphic mottles.

Notes: base of Bwb3 slopes to N and W.

Client: Hunter Research, Inc.

Unit: EU16

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 9/22/2006

Figure: 8

Horizon	Depth (cm)	Morphology
Apb1	0-17	Dark brown (10YR3/3) silt loam; weak medium subangular blocky parting to moderate coarse granular structure; common fine faint redoximorphic mottles; little or no gravel; friable; clear smooth boundary.
Apb2	17-22	Dark yellowish brown (10YR3/4) silt loam; weak medium prismatic parting to moderate coarse granular structure; common fine faint redoximorphic mottles; little or no gravel; somewhat firm; clear smooth boundary.
Ab(?)	22-30	Dark brown to brown (7.5YR3/4-4/4) silt loam; weak medium subangular blocky structure; no gravel; friable; discontinuous lower boundary.
Bwb1	30-50	Brown to strong brown (7.5YR4/4-4/6) silt loam; moderate medium subangular blocky structure; friable; <1% fine round gravel; many medium distinct redoximorphic mottles; clear smooth boundary.
Bwb2	50-70	Brown to strong brown (7.5YR4/4-4/6) very fine sandy loam; weak coarse prismatic structure; friable; <1% fine round gravel; many medium distinct, a few coarse prominent redoximorphic mottles;
BC	70-75 (BOE)	Brown (7.5YR4/4) loamy sand; weak coarse subangular blocky structure; friable; 3-5% round gravel and small cobbles, increasing in size and number w/ depth; many coarse prominent redoximorphic mottles.

Notes: Ab may be organic and Fe staining illuviated from overlying horizon.

Client: Hunter Research, Inc.

Unit: EU18

Location: Left bank high floodplain
Red Clay Creek
Glennville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 9/22/2006

Figure: 9

Horizon	Depth (cm)	Morphology
AC	0-6	Dark yellowish brown (10YR4/4-4/6) silt loam, much mica, a few thin strata of sand, never plowed.
Apb1	6-30	Dark yellowish brown (10YR4/4) silt loam; moderate medium subangular blocky parting to moderate coarse granular structure; common fine distinct redoximorphic mottles; little or no gravel; friable; abrupt smooth boundary.
Apb2	30-37	Dark yellowish brown (10YR3/6) silt loam; moderate medium subangular blocky structure; common fine distinct redoximorphic mottles; little or no gravel; somewhat firm; abrupt smooth boundary.
CB	37-47	Stratified (10-15 thin strata) sand, sandy loam, silt loam, probably result of one large flood event; abrupt smooth (scoured) boundary.
Bwb	47-72	Dark yellowish brown (10YR4/6) to strong brown (7.5YR4/6) sandy loam; moderate medium subangular blocky structure; friable; 1% fine and very fine round gravel; many coarse prominent redoximorphic mottles; clear smooth boundary.
BC	72-86 (BOE)	Brown (7.5YR4/4) loamy coarse sand; weak coarse subangular blocky structure; friable; many coarse prominent redoximorphic mottles; round gravel in same matrix at base of unit.

Notes: In Bwb, W 1/2 of S wall, S 2/3 of W wall is silt loam rather than sandy loam, much Mn staining; this is in-filled scour channel or vortex scour.

Client: Hunter Research, Inc.

Unit: EU19

Location: Left bank high floodplain
Red Clay Creek
Glenville, New Castle Co.
Delaware

Slope: 0-1%

Soil scientist: John Stiteler

Date: 9/22/2006

Figure: 10

Horizon	Depth (cm)	Morphology
Apb1	0-27	Dark yellowish brown (10YR4/4) silt loam; moderate medium subangular blocky parting to moderate coarse granular structure; common fine distinct redoximorphic mottles; little or no gravel; friable; abrupt smooth boundary.
Apb2	27-35	Dark yellowish brown (10YR3/6) silt loam; moderate medium subangular blocky structure; common fine distinct redoximorphic mottles; little or no gravel; somewhat firm; abrupt smooth boundary.
CB	35-38	Stratified sand, sandy loam, silt loam, probably result of one large flood event; abrupt wavy (scoured) boundary.
Bwb1	38-50	Dark yellowish brown (10YR4/6) to strong brown (7.5YR4/6) silt loam; moderate medium subangular blocky structure; friable; 1% fine and very fine round gravel; many coarse prominent redoximorphic mottles; clear smooth boundary.
Bwb2	50-72	Dark yellowish brown (10YR4/6) to strong brown (7.5YR4/6) sandy loam; moderate medium subangular blocky structure; friable; 1% fine and very fine round gravel; many coarse prominent redoximorphic mottles; clear smooth boundary.
BC (BOE)	72-80	Brown (7.5YR4/4) loamy coarse sand; weak coarse subangular blocky structure; friable; many coarse prominent redoximorphic mottles; round gravel in same matrix at base of unit.

Notes: CB not present in all walls of unit, varies from 1-3 cm thickness.